

[illegible][illegible]

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```

```
1 0001 0 MODULE RPG$DIVIDE(IDENT='1-003')=
2 0002 1 BEGIN
3 0003 1
4 0004 1
5 0005 1 *****
6 0006 1 *
7 0007 1 * COPYRIGHT (c) 1978, 1980, 1982, 1984 BY
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24 0024 1 *
25 0025 1 *
26 0026 1 *****
27 0027 1
28 0028 1
29 0029 1 ++
30 0030 1
31 0031 1 FACILITY:      RPGII SUPPORT
32 0032 1
33 0033 1 ABSTRACT:
34 0034 1
35 0035 1      This module supports RPG divides over 31 packed digits
36 0036 1
37 0037 1 ENVIRONMENT:  VAX/VMS user mode
38 0038 1
39 0039 1 AUTHOR: Shelly T. Solomon, CREATION DATE: 15-Jul-1983
40 0040 1
41 0041 1 MODIFIED BY:
42 0042 1
43 0043 1 1-001 Original.
44 0044 1 1-002 Pass scale-data to PLI$DIV_PK_SHRT.
45 0045 1 1-003 Change reference to PLI$ routine to OTSS routine.
46 0046 1
47 0047 1
48 0048 1 REQUIRE 'RTLIN:RPGPROLOG';
49 0113 1
50 0114 1
51 0115 1 !+
52 0116 1 ! TABLE OF CONTENTS
53 0117 1 !-
54 0118 1
55 0119 1 FORWARD ROUTINE
56 0120 1     RPG$DIV_LONG : NOVALUE;
57 0121 1
```

STS 15-Jul-1983  
STS 02-Nov-1983  
DG 05-Mar-1984

! switches, psects, macros,  
! linkages and LIBRARYs



RPG\$DIVIDE  
1-003

L 11  
16-Sep-1984 02:12:53  
14-Sep-1984 13:04:17

VAX-11 Bliss-32 V4.0-742  
[RPGRTL.SRC]RPGDIVIDE.B32;1

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(1)

:	58	0122	1	!+
:	59	0123	1	!-
:	60	0124	1	EXTERNAL REFERENCES
:	61	0125	1	!
:	62	0126	1	EXTERNAL ROUTINE
:	63	0127	1	OTSS\$DIV_PKSHORT;
:	64	0128	1	
:	65	0129	1	BUILTIN
:	66	0130	1	ASHP;
:	67	0131	1	

```
69 0132 1 GLOBAL ROUTINE RPG$DIV_LONG(  
70 0133 1     FACTOR_1: REF BLOCK[,BYTE],      ! dividend (packed dec by descriptor)  
71 0134 1     FACTOR_2: REF BLOCK[,BYTE],      ! divisor (packed dec by descriptor)  
72 0135 1     RESULT: REF BLOCK[,BYTE]         ! result (packed dec by descriptor)  
73 0136 1     ): NOVALUE=  
74 0137 1  
75 0138 1 ++  
76 0139 1  
77 0140 1 FUNCTIONAL DESCRIPTION:  
78 0141 1  
79 0142 1     This routine supports RPG divides when precision and scale  
80 0143 1     requirements call for precision > 31 decimal digits.  
81 0144 1     It accepts as input packed decimal strings, and outputs a  
82 0145 1     packed result.  
83 0146 1  
84 0147 1 CALLING SEQUENCE:  
85 0148 1  
86 0149 1     CALL RPG$DIV_LONG (factor_1.rp.ds, .factor_2.rp.ds, result.wp.ds)  
87 0150 1  
88 0151 1 FORMAL PARAMETERS:  
89 0152 1  
90 0153 1     FACTOR_1      address of descriptor of dividend for divide  
91 0154 1                   The allowable data type is packed.  
92 0155 1  
93 0156 1     FACTOR_2      address of descriptor of divisor for divide  
94 0157 1                   The allowable data type is packed.  
95 0158 1  
96 0159 1     RESULT       address of descriptor of result of the divide  
97 0160 1                   operation. The allowable data type is packed.  
98 0161 1  
99 0162 1 IMPLICIT INPUTS:  
100 0163 1  
101 0164 1     NONE  
102 0165 1  
103 0166 1 IMPLICIT OUTPUTS:  
104 0167 1  
105 0168 1     NONE  
106 0169 1  
107 0170 1 ROUTINE VALUE:  
108 0171 1  
109 0172 1     NONE  
110 0173 1  
111 0174 1 SIDE EFFECTS:  
112 0175 1  
113 0176 1     NONE  
114 0177 1  
115 0178 1 --  
116 0179 2     BEGIN  
117 0180 2  
118 0181 2     LOCAL  
119 0182 2         A,      ! additional precision needed  
120 0183 2         C,      ! scale factor for dividend  
121 0184 2         D,      ! scale-data for divide  
122 0185 2     DIVIDEND : VECTOR[16,BYTE];    ! scaled dividend  
123 0186 2 ++  
124 0187 2 Note: the variables names, A,C, and D were chosen to correspond to the  
125 0188 2 ! PLI(OTS) documentation of the run-time routine. (See the Language Support
```

```
126 0189 2 | Reference Manual.)
127 0190 2
128 0191 2
129 0192 2 calculate additional digits of precision required
130 0193 2 The sign of the scale which we use is the negative of the scale which the
131 0194 2 run-time routine is referring to, because of the way we store negative numbers.
132 0195 2
133 0196 2 A = .FACTOR_1[DSC$W_LENGTH] - .FACTOR_2[DSC$B_SCALE] - .RESULT[DSC$B_SCALE]
134 0197 2 + .FACTOR_1[DSC$B_SCALE] -31;
135 0198 2
136 0199 2 +
137 0200 2 Get scale factor needed to make the dividend a 31 digit number.
138 0201 2
139 0202 2 C = 31 - .FACTOR_1[DSC$W_LENGTH];
140 0203 2
141 0204 2 +
142 0205 2 Get the data scale
143 0206 2
144 0207 2 D = 31 + .FACTOR_2[DSC$B_SCALE];
145 0208 2
146 0209 2 +
147 0210 2 Move from the packed dividend to temporary dividend scaling by 10**c
148 0211 2
149 0212 2 ASHP(C, FACTOR_1[DSC$W_LENGTH], .FACTOR_1[DSC$A_POINTER], %REF(0),
150 0213 2 %REF(31), DIVIDEND);
151 0214 2
152 0215 2 OTS$DIV_PKSHORT(DIVIDEND, .FACTOR_2[DSC$A_POINTER], .FACTOR_2[DSC$W_LENGTH],
153 0216 2 .RESULT[DSC$A_POINTER], .RESULT[DSC$W_LENGTH], .A, .D);
154 0217 2
155 0218 2 RETURN;
156 0219 1 END;
```

```
.TITLE RPG$DIVIDE
.IDENT \1-003\
```

```
.EXTRN OTS$DIV_PKSHORT
```

```
.PSECT _RPG$CODE, NOWRT, SHR, PIC, 2
```

```
.ENTRY RPG$DIV_LONG, Save R2,R3,R4,R5,R6,R7
```

```
SUBL2 #16, SP
```

```
MOVL FACTOR_1, R2
```

```
MOVL FACTOR_2, R5
```

```
MOVZWL (R2), R0
```

```
CVTBL 8(R5), R1
```

```
SUBL2 R1, R0
```

```
MOVL RESULT, R4
```

```
CVTBL 8(R4), R3
```

```
SUBL2 R3, R0
```

```
CVTBL 8(R2), R1
```

```
MOVAB -31(R1)(R0), A
```

```
MOVZWL (R2), C
```

```
SUBL3 C, #31, C
```

```
CVTBL 8(R5), D
```

```
ADDL2 #31, D
```

```
ASHP C, (R2), @4(R2), #0, #31, DIVIDEND
```

```
00 04 B2
```

```
5E 00FC 00000
52 04 AC D0 00002
55 08 AC D0 00005
50 62 3C 00009
51 08 A5 98 00010
50 51 C2 00014
54 0C AC D0 00017
53 08 A4 98 0001B
50 53 C2 0001F
51 08 A2 98 00022
57 E1 A140 9E 00026
50 62 3C 0002B
50 1F 50 C3 0002E
56 08 A5 98 00032
56 1F C0 00036
62 50 F8 00039
```

```
0132
0196
0197
0202
0207
0212
```



	6E		1F	0003F
			56	DD 00041
			57	DD 00043
	7E		64	3C 00045
		04	A4	DD 00048
	7E		65	3C 0004B
		04	A5	DD 0004E
		18	AE	9F 00051
00000000G	00		07	FB 00054
				04 0005B

```

PUSHL    D
PUSHL    A
MOVZWL   (R4), -(SP)
PUSHL    4(R4)
MOVZWL   (R5), -(SP)
PUSHL    4(R5)
PUSHAB   DIVIDEND
CALLS    #7, OTSS$DIV_PKSHORT
RET

```

0216  
0215  
0219

```
; Routine Size:  92 bytes,    Routine Base:  _RPG$CODE + 0000
```

: 157 0220 1

RPG\$DIVIDE  
1-003

C 12  
16-Sep-1984 02:12:53  
14-Sep-1984 13:04:17

VAX-11 Bliss-32 V4.0-742  
[RPGRTL.SRC]RPGDIVIDE.B32;1

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: 159 0221 1 END  
: 160 0222 0 ELUDOM

PSECT SUMMARY

Name	Bytes	Attributes
_RPG\$CODE	92	NOVEC,NOWRT, RD , EXE, SHR, LCL, REL, CON, PIC,ALIGN(2)

Library Statistics

File	----- Total	Symbols Loaded	----- Percent	Pages Mapped	Processing Time
\$255\$DUA28:[SYSLIB]STARLET.L32;1	9776	3	0	581	00:01.0
\$255\$DUA28:[RPGRTL.OBJ]RPGLIB.L32;1	54	0	0	9	00:00.1

COMMAND QUALIFIERS

BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/NOTRACE/LIS=LIS\$:RPGDIVIDE/OBJ=OBJ\$:RPGDIVIDE MSRC\$:RPGDIVIDE/UPDATE=(ENH\$:RPGDIVIDE)

: Size: 92 code + 0 data bytes  
: Run Time: 00:04.2  
: Elapsed Time: 00:17.5  
: Lines/CPU Min: 3148  
: Lexemes/CPU-Min: 11063  
: Memory Used: 50 pages  
: Compilation Complete



0331 AH-BT13A-SE  
VAX/VMS V4.0

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